

ABSTRACT

Mobile Cellular Radio

5 A moveable switching system provides a cell, or small network of cells, which moves with the aircraft or other vehicle on which it is located, but whose operation appears to the user as an ordinary fixed base station of the "host" network to which it is connected. A cellular mobile switching centre 116, on board the aircraft, detects a call attempt or registration attempt from a mobile unit 110 and
10 generates a temporary onboard identity for association with the mobile identity code. The temporary onboard identity code is associated with a node of the onboard part of a satellite communications system. The code is returned to the onboard MSC 16 which sets up a call over a satellite system 113,6,4 to the MSC 141 of a host network 104.

15 When such a call is received from the satellite ground station 4 the host MSC 141 routes the call to an interface unit 148 which retrieves the identities of the cellular telephone and the onboard terminal. The cellular identity is passed to a network registration unit 145 to allow a location update to allow calls to the cellular telephone 110 to be routed to the mobile station 141. Consequently, any incoming
20 calls intended for the mobile user will now be directed to the network 104, as the mobile user is currently registered there.

The interface unit 148 also passes the temporary onboard identity code to a call diversion instruction unit 146, which generates a "divert on busy" instruction to the VLR 144 (step 615). This causes any calls for the cellular telephone 10 received
25 by the host MSC 141 to be diverted via the satellite link 4, 6, 113 to the node indicated by the temporary onboard identity code, where the call is routed to the onboard MSC 116 and the code re-translated back to the cellular identity code to allow connection to the cellular telephone 110.